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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/430.052 10/29/99 CRISFIELD

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IP PATENTS

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1900 FIFTEENTH STREET

BOULDER CO 80302

EXAMINER

MARTIN, L.

ART UNIT

PAPER NUMBER

2855

DATE MAILED:
07/05/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/430,052

Applicant(s)

CRISFIELD ET AL.

Examiner

Lilybett Martir

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: .

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

- Element 204, disclosed in Fig. 2, is not defined in the Detailed Description of the invention.

Appropriate correction is required.

Drawings

New formal drawings are required in this application because :

- Elements 120 and 121 are not pointed out in Fig. 1 as noted in the Detailed Description of the invention.
- Element 200 is not pointed out in Fig. 2 as noted in the Detailed Description of the invention.
- Note the other informalities that are disclosed in the From PTO 948.

Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the Patent and Trademark Office no longer prepares new drawings.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- In Claim 7, the recitation of “a top side, a bottom side, a front side, and a back side between said inlet and outlet ends” makes said claim unclear since it doesn’t allow to distinguish which structure is being defined by said sides.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Wenger et al. (Pat. 5,394,758). Wenger et al. teach the claimed invention, including:

- A first flow tube as in element 11 and a second flow tube as in element 12; a substantially semicircular arc between an inlet and an outlet end of each of said first flow tube and second flow tube as in elements 115 and 125; a driver as in element 16, affixed to said first and said second flow tube at a point on said substantially semicircular arc that is substantially perpendicular to bending axes of said first and said second flow tube wherein said driver oscillates said first flow tube and said second flow tube in opposition to each other; a first brace bar as in element 32, affixed to said first flow tube and said second flow tube proximate said inlet end; a second brace bar as in element 33, affixed to said first flow tube and said second flow tube proximate said inlet end; and pick-off sensors as in elements 17 and 18, affixed to said first and said second flow tubes in a position that allows said pick-off sensors to detect the greatest amount of Coriolis force at a low amplitude vibration, as in claim 1.
- An inlet manifold as in element 14, affixed to said inlet ends of said first flow tube and said second flow tube to affix said first flow tube and said second flow tube to a pipeline (Col. 4, lines 32-35), as in claim 2.

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- A substantially 90 degree bend in a flow path through said inlet manifold
(Note how elements 19 and 20 are connected to elements 113, 123, 114 and 124) as in claim 3.
- An outlet manifold as in element 14, affixed to said outlet ends of said second flow tube and said second flow tube to connect said first flow tube and said second flow tube to a pipeline (Col. 4, lines 32-35), as in claim 4.
- A substantially 90 degree bend in a flow path through said outlet manifold
(Note how elements 19 and 20 are connected to elements 113, 123, 114 and 124) as in claim 5.
- An inlet manifold as in element 14, affixed to said inlet ends of said first flow tube and said second flow tube to affix said first flow tube and said second flow tube to a pipeline (Col. 4, lines 32-35); an outlet manifold as in element 14, affixed to said outlet ends of said second flow tube and said second flow tube to connect said first flow tube and said second flow tube to a pipeline (Col. 4, lines 32-35); and a spacer as in element 13, affixed to said inlet manifold and said outlet manifold to maintain a fixed distance between said inlet manifold and said outlet manifold, as in claim 6.
- An inlet end as in elements 113 and 123, affixed to said inlet manifold; an outlet end as in elements 114 and 124, affixed to said outlet manifold; and a top side, a bottom side, a front side, and a back side between said inlet and outlet ends (Note that in Fig. 2, element 13 exhibits all of these features); and openings through said top side of said spacer (Col. 4, lines 4-7) through

which said first flow tube and second flow tube are affixed to said inlet and said outlet manifold, as in claim 7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-9 are rejected under 35 U.S.C. 103 as being unpatentable over Wenger et al. in view of Ollila et al. (Pat. 6,044,715). Wenger et al. disclose the claimed invention, except for:

- A casing that encloses said first flow tube and second flow tube affixed to said top side of said spacer, as in claim 8.
- A front side wall; a back side wall; and a mass affixed to said front side and said back side wall to change vibrational modes of said housing, as in claim 9.

Ollila et al. teaches a coriolis effect mass sensor as in element 400 that has a housing composed by elements 701 and 450. Said housing has a front side wall 701, a back side wall 450 and a mass as in elements 703 and 704, that is affixed to said front side wall and said back side wall to change vibrational modes of said housing.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mass flow sensor of Wenger et al. using the teachings of Ollila et al. for the purpose of protecting the sensor from the atmosphere that surrounds it thereby minimizing any impact on it's measurement performance.

Claims 10-11 are rejected under 35 U.S.C. 103 as being unpatentable over Wenger et. al. Wenger et al. discloses the claimed invention, except for:

- The position of said pick-off sensors is substantially 20-50 degrees from said bending axes of said first and said second flow tube, as in claim 10.
- The position of said pick-off sensors is 30 degrees from said bending axes of said first and said second flow tube, as in claim 11.

Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233; it would have been obvious to one of ordinary skill in the art at the time the invention was made to position in Wenger et al. pick-off sensors in a selected angle relative to said first and second flow tubes for the purpose of detecting the greatest amount of Coriolis forces caused by the flowing material.

Citation of Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art considered pertinent during examination of the examined application is:

- Zschel (Pat. 5,549,009) Apparatus for determining and dosing mass flows.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilybett Martir whose telephone number is (703)305-6900. The examiner can normally be reached on 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Fuller can be reached on (703)308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3432 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

LM

Lilybett Martir
Examiner
Art Unit 2855

RM

June 27, 2001

Benjamin R. Fuller

Benjamin R. Fuller
Supervisory Patent Examiner
Technology Center 2800